

Remarks

Support for the above-requested amendments to claim 1 is found at least at page 8, line 37 to page 9, line 2. No question of new matter arises and entry of the amendments is respectfully requested.

Claims 1-18 are before the Examiner for consideration.

Rejection under 35 U.S.C. §103(a)

Claims 1-3, 5-7, 10-11, 15-16, and 18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,810,576 to Gaa, *et al.* ("Gaa") in view of U.S. Patent No. 5,436,980 to Weeks, *et al.* ("Weeks"). The Examiner asserts that Gaa discloses a method of making a chopped strand mat that includes a step of dispersing chopped strand glass in white water. It is asserted that the chopped strand glass fibers are dried after being sized with a liquid that includes an organosilane and a film former. Additionally, it is asserted that the fibers are formed into a web on a forming wire where a binder is applied and the web is heat treated. The Examiner admits that Gaa does not clearly teach applying the size to glass strands where a strand is an assembly of glass fibers.

In this regard, the Examiner cites Weeks for assertedly teaching that it was known in the art to form glass filaments, assemble them, and then apply the size to the assembly of fibers. The Examiner concludes that it would have been obvious to one of skill in the art to apply the size of Gaa to the glass strands as taught by Weeks because Weeks teaches that applying the size to an assembly of fibers is an alternate, known method of forming a glass strand.

Applicant's Response

In response to this rejection, Applicant respectfully directs the Examiner's attention to claim 1 and submits that claim 1 defines a process for preparing a chopped strand mat that is not taught or suggested within Gaa and/or Weeks. Additionally, Applicant respectfully submits that Gaa and Weeks do not teach or suggest the combination of features recited in claim 1.

Gaa teaches chemically treated glass fibers that have good dispersibility and good retention of the chemical treating composition in an aqueous medium. (*See, e.g.*, column 3, lines 9-16). Gaa also teaches that an aqueous dispersion of the treated glass fibers is achieved by merely placing the chopped fibers into a batch of water (with or without dispersing aids) with agitation. (*See, e.g.*, column 12, lines 11-15). The dispersion of glass fibers is then used

in a wet-laid process or other paper making process. (*See, e.g.*, column 12, lines 15-17). It is clear from the teachings of Gaa that the aqueous dispersion is a dispersion of glass fibers. Indeed, Gaa teaches that a lack of good dispersion of the glass fibers in the aqueous medium “hampers the formation of a uniform mat and adversely affects the strength of the resultant sheet-like mat or end product incorporating the mat”. (*See, e.g.*, column 2, lines 61-65).

These teachings of Gaa may be contrasted to Applicant’s invention as recited in claim 1 where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands. Indeed, the goal of the present invention is to ensure that the individual filaments are assembled as far as possible in the form of strands. (*See, e.g.*, page 1, lines 10-12 of the specification). It is respectfully submitted that Gaa does not teach or even suggest a chopped strand mat with at least 80% by weight of the filaments within the mat in the form of chopped strands as required by claim 1. Gaa specifically and clearly teaches good disperseability of the glass fibers and is completely silent with respect to any teaching whatsoever of a chopped strand mat that has at least 80% by weight of the filaments in the form of chopped strands.

Applicant respectfully submits that the dispersion of glass fibers in Gaa forms a non-woven sheet-like mat, which, Applicant submits, is vastly different from the chopped strand mat of the present invention. (*See, e.g.*, column 13, lines 8-10 and 46-50). In particular, it is submitted that the mat of Gaa is an assembly of individual fibers whereas in claim 1, chopped strands are retained on the forming wire to form a web of chopped strands. There is simply no teaching or suggestion within Gaa of a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands. Weeks is silent with regard to any teaching or suggestion of a chopped strand mat having the claimed percentage of filaments in the form of chopped strands, and as such, cannot make up for the deficiencies of Gaa. Accordingly, Applicant submits that claim 1, and all claims dependent therefrom, are non-obvious and patentable.

In the outstanding Office Action, the Examiner asserts that it would have been obvious to one of skill in the art to apply the size of Gaa to formed strands as taught by Weeks because it was an alternative method for forming a glass strand. (*See, e.g.*, page 4, lines 9-12 of the Office Action dated May 15, 2009). Assuming, *arguendo*, that Weeks teaches the application of a size composition to glass strands and that one of skill in the art were to apply the size of Gaa to fiber strands, the combination would still not result in the claimed invention. As discussed above, Gaa clearly teaches the dispersion of fibers in an

aqueous medium. Indeed, the treated fibers of Gaa are in the form of improved choppable bundles of fibers that have good dispersibility in the aqueous medium. (See, e.g., column 3, lines 9-16). It is respectfully submitted that even if the teachings of Gaa and Weeks were combined as suggested by the Examiner, the result would not be a chopped fiber mat containing at least 80% by weight of the filaments in the form of chopped strands as required by claim 1 at least because Gaa teaches a dispersion of the fibers in the aqueous medium. Accordingly, Applicant submits that claim 1 is non-obvious and patentable for this additional reason.

It is also respectfully submitted that Gaa teaches away from the claimed process. As discussed *supra*, Gaa teaches the dispersion of fibers in an aqueous medium for use in a wet-laid process or other papermaking process. (See, e.g., column 12, lines 15-17). Applicant submits that such a dispersion of fibers teaches away from the process of the present invention where the sizing composition maintains the glass fibers in fiber bundles throughout the mat forming process. Indeed, Applicant respectfully submits that the dispersion of fibers in Gaa is exactly the opposite of the retention of chopped strands in the instant invention. As discussed previously, Weeks does not make up for the deficiencies of Gaa. As such, it is respectfully submitted that claim 1, and all claims dependent therefrom, are not obvious over the combination of Gaa and Weeks.

Further, Applicant submits that there is no motivation for one of skill in the art to arrive at the process for preparing a chopped strand mat as claimed in claim 1 based on the disclosures of Gaa and Weeks. To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, and the prior art reference (or references when combined) must teach or suggest all the claim limitations. (See, e.g., *Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 7, August 2008, §2143 citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007)).

It is respectfully submitted that one of ordinary skill in the art would not be motivated to arrive at a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands based on the teachings of Gaa and Weeks because there is simply no teaching or even a suggestion within either Gaa or Weeks of a chopped strand mat having at least 80% by weight of the filaments in the form of chopped strands as is discussed in detail above. Without some teaching or

suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness.

Also, as discussed above, Gaa and Smith do not teach or suggest a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands. Therefore, Applicant respectfully submits that Gaa and Weeks, alone or in combination, fail to teach all of the claim limitations set forth in claim 1. Accordingly, it is submitted that a *prima facie* case of obviousness has not been established for this additional reason.

In view of the above, it is respectfully submitted that independent claim 1 is not taught or suggested by Gaa and Weeks and that claim 1 is therefore non-obvious and patentable. With respect to dependent claims 2-3, 5-7, 10-11, 15-16, and 18, Applicant submits that because independent claim 1 is not taught or suggested by Gaa and/or Weeks and because claims 2-3, 5-7, 10-11, 15-16, and 18 are dependent upon claim 1 and contain the same elements as claim 1, dependent claims 2-3, 5-7, 10-11, 15-16, and 18 are also not taught or suggested by Gaa and/or Weeks.

In light of the above, Applicant submits that claims 1-3, 5-7, 10-11, 15-16, and 18 are not obvious over Gaa in view of Weeks and respectfully requests reconsideration and withdrawal of this rejection.

Rejection under 35 U.S.C. §103(a)

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,810,576 to Gaa, *et al.* ("Gaa") in view of U.S. Patent No. 5,436,980 to Weeks, *et al.* ("Weeks") as applied to claims 1-3, 5-7, 10-11, 15-16, and 18 above, and further in view of Vinamul 8837 ("Vinamul") product specification. It is asserted that although Gaa discloses employing a film forming agent which may include a PVA polymer, Gaa does not disclose the solubility of the film former. In this regard, Vinamul is cited for assertedly teaching a PVA film forming polymer that is specifically designed for use in chopped strand mats that has the claimed solubility. The Examiner concludes that it would have been obvious to one of skill in the art to have employed the film former of Vinamul in the aqueous composition of Gaa based on its art recognized suitability for this purpose.

Applicant's Response

In response to this rejection, Applicant respectfully directs the Examiner's attention to independent claim 1 and to the arguments set forth above with respect to the rejection of

claims 1-3, 5-7, 10-11, 15-16, and 18 under 35 U.S.C. §103(a) to Gaa in view of Weeks and submits that claim 1 defines a process for preparing a chopped strand mat that is not taught or suggested within Gaa and Weeks. Indeed, neither Gaa nor Weeks teaches or suggests a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands as required by claim 1. In addition, Applicant submits that the teachings of Vinamul do not add to the Examiner's rejection so as to make claim 1 unpatentable. Vinamul is silent with respect to any teaching or suggestion of a chopped strand mat having the claimed percentage of filaments in the form of chopped strands. It is submitted that even with the addition of the teachings of Vinamul, the combination of Gaa and Weeks still does not teach or suggest a method for forming a chopped strand mat that contains at least 80% by weight of the filaments in the form of chopped strands as claimed in claim 1. As such, it is submitted that the combination of Gaa, Weeks, and Vinamul does not teach or suggest Applicant's invention as recited in claim 1. Because claim 4 is dependent upon claim 1, which, as discussed in detail above, is not taught or suggested by Gaa, Weeks, and/or Vinamul, Applicant submits that claim 4 is also not taught or suggested by Gaa, Weeks, and/or Vinamul.

In view of the above, Applicant respectfully submits that claim 4 is non-obvious and patentable over Gaa in view of Weeks and Vinamul and respectfully requests that the Examiner reconsider and withdraw this rejection.

Rejection under 35 U.S.C. §103(a)

Claims 8 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,810,576 to Gaa, *et al.* ("Gaa") in view U.S. Patent No. 5,436,980 to Weeks, *et al.* ("Weeks") as applied to claims 1-3, 5-7, 10-11, 15-16, and 18 above, and further in view of U.S. Patent No. 4,526,914 to Dolin ("Dolin"). The Examiner admits that Gaa does not teach the use of a thickener. It is asserted, however, that Dolin teaches that it is desired that the viscosity of white water be between 1-12 cps, which corresponds to the claimed range. The Examiner concludes that it would have been obvious to one of skill in the art to have added the thickener disclosed by Gaa in amounts to produce the viscosity taught by Dolin because such values were taught in the art as desirable and conventional in forming white water dispersants.

Applicant's Response

In response to this rejection, Applicant respectfully directs the Examiner's attention to independent claim 1 and to the arguments set forth above with respect to the rejection of claims 1-3, 5-7, 10-11, 15-16, and 18 under 35 U.S.C. §103(a) to Gaa in view of Weeks and submits that claim 1 defines a process for preparing a chopped strand mat that is not taught or suggested within Gaa and Weeks. Indeed, neither of Gaa or Weeks teaches or suggests a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands as required by claim 1. In addition, Applicant submits that the teachings of Dolin do not add to the Examiner's rejection so as to make claim 1 unpatentable. Dolin is silent with respect to any teaching or suggestion of a chopped strand mat having the claimed percentage of filaments in the form of chopped strands. Applicant submits that even with the addition of the teachings of Dolin, the combination of Gaa and Weeks still does not teach or suggest a method for forming a chopped strand mat that contains at least 80% by weight of the filaments in the form of chopped strands as claimed in claim 1. As such, it is submitted that the combination of Gaa, Weeks, and Dolin does not teach or suggest Applicant's invention as recited in claim 1. Because claims 8 and 9 are dependent upon claim 1, which, as discussed in detail above, is not taught or suggested by Gaa, Weeks, and/or Dolin, Applicant submits that claims 8 and 9 are also not taught or suggested by Gaa, Weeks, and/or Dolin.

In view of the above, Applicant respectfully submits that claims 8 and 9 are non-obvious and patentable over Gaa in view of Smith and Dolin and respectfully requests that the Examiner reconsider and withdraw this rejection.

Rejection under 35 U.S.C. §103(a)

Claim 12 has been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,810,576 to Gaa, *et al.* ("Gaa") in view of U.S. Patent No. 5,436,980 to Weeks, *et al.* ("Weeks") as applied to claims 1-3, 5-7, 10-11, 15-16, and 18 above, and further in view of U.S. Patent No. 4,917,764 to Lalwani, *et al.* ("Lalwani"). The Examiner admits that Gaa does not teach the claimed temperature of the heating step. In this regard, Lalwani is cited for assertedly teaching that such heat treating steps are conventionally performed at temperatures from 100-400 °C. The Examiner concludes that it would have been obvious to one of skill in the art to have employed temperatures as taught by Lalwani in the method taught by Gaa because such temperatures were known in the art.

Applicant's Response

In response to this rejection, Applicant respectfully directs the Examiner's attention to independent claim 1 and to the arguments set forth above with respect to the rejection of claims 1-3, 5-7, 10-11, 15-16, and 18 under 35 U.S.C. §103(a) to Gaa in view of Weeks and submits that claim 1 defines a process for preparing a chopped strand mat that is not taught or suggested within Gaa and Weeks. Indeed, neither Gaa nor Weeks teaches or suggests a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands as required by claim 1. In addition, Applicant submits that the teachings of Lalwani do not add to the Examiner's rejection so as to make claim 1 unpatentable. Lalwani is silent with respect to any teaching or suggestion of a chopped strand mat having the claimed percentage of filaments in the form of chopped strands. Even with the addition of the teachings of Lalwani, the combination of Gaa and Weeks still does not teach or suggest a method for forming a chopped strand mat that contains at least 80% by weight of the filaments in the form of chopped strands as claimed in claim 1. As such, it is submitted that the combination of Gaa, Weeks, and Lalwani does not teach or suggest Applicant's invention as recited in claim 1. Because claim 12 is dependent upon claim 1, which, as discussed in detail above, is not taught or suggested by Gaa, Weeks, and/or Lalwani, Applicant submits that claim 12 is also not taught or suggested by Gaa, Weeks, and/or Lalwani.

In view of the above, Applicant respectfully submits that claim 12 is non-obvious and patentable over Gaa in view of Smith and Lalwani and respectfully requests reconsideration and withdrawal of this rejection.

Rejection under 35 U.S.C. §103(a)

Claims 13-14 and 17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,810,576 to Gaa, *et al.* ("Gaa") in view of U.S. Patent No. 5,436,980 to Weeks, *et al.* ("Weeks") as applied to claims 1-3, 5-7, 10-11, 15-16, and 18 above, and further in view of U.S. Patent No. 4,112,174 to Hannes, *et al.* ("Hannes"). The Examiner admits that Gaa does not disclose the basis weight of the mat or the claimed number of filaments. In this regard, Hannes is cited for assertedly teaching basis weights from 100-120 g/m² and strands having 1-300 filaments. The Examiner concludes that it would have been obvious to one of skill in the art to have employed the claimed number of

filaments and to have formed mats having the claimed basis weights in view of the teachings of Hannes that such materials and weights were conventionally known and used.

Applicant's Response

In response to this rejection, Applicant respectfully directs the Examiner's attention to independent claim 1 and to the arguments set forth above with respect to the rejection of claims 1-3, 5-7, 10-11, 15-16, and 18 under 35 U.S.C. §103(a) to Gaa in view of Weeks and submits that claim 1 defines a process for preparing a chopped strand mat that is not taught or suggested within Gaa and Weeks. Indeed, neither Gaa nor Weeks teaches or suggests a process for preparing a chopped strand mat where the chopped strand mat contains at least 80% by weight of the filaments in the form of chopped strands as required by claim 1. As discussed above, Gaa clearly teaches the dispersion of fibers in an aqueous medium. Indeed, the treated fibers of Gaa are in the form of improved choppable bundles of fibers that have good dispersibility in the aqueous medium. (*See, e.g.*, column 3, lines 9-16). It is respectfully submitted that even if the teachings of Gaa, Weeks, and Hannes were combined as suggested by the Examiner, the result would not be a chopped fiber mat containing at least 80% by weight of the filaments in the form of chopped strands as required by claim 1 at least because Gaa teaches a dispersion of the fibers in the aqueous medium. As such, it is submitted that the combination of Gaa, Weeks, and Hannes does not teach or suggest Applicant's invention as recited in claim 1. Because claims 13-14 and 17 are dependent upon claim 1, which, as discussed in detail above, is not taught or suggested by Gaa, Weeks, and/or Hannes, Applicant submits that claims 13-14 and 17 are also not taught or suggested by Gaa, Weeks, and/or Hannes.

In view of the above, Applicant respectfully submits that claims 13-14 and 17 are non-obvious and patentable over Gaa in view of Smith and Hannes and respectfully requests reconsideration and withdrawal of this rejection.

Conclusion

In light of the above, Applicant believes that this application is now in condition for allowance and therefore requests favorable consideration.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-0568 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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